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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/005,494	11/06/2001	Kazuo Kobayashi	P6121a	7990
20178	7590	10/19/2004	EXAMINER	
EPSON RESEARCH AND DEVELOPMENT INC INTELLECTUAL PROPERTY DEPT 150 RIVER OAKS PARKWAY, SUITE 225 SAN JOSE, CA 95134			SHAPIRO, LEONID	
		ART UNIT		PAPER NUMBER
				2673

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/005,494	KOBAYASHI, KAZUO
	Examiner	Art Unit
	Leonid Shapiro	2673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 01 July 2004.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-11 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-11 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 07012004.

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shingo (JP 11-149278).

As to claim 1, Shingo teaches a display driver apparatus for driving a display comprising a plurality of pixels, each of which is located at a respective one of a plurality of intersections formed between one of a plurality of common electrodes (240 scanning lines) and one of a plurality of segment electrodes (320 signal lines), wherein an orientation state of an electro-optical material of each pixel is controlled by a voltage applied to it (See Drawing 1, item 10, in Detailed Description See paragraph 0007), the display driver apparatus comprising:

a common electrode drive device (scanning line driver 30) that supplies a scanning signal for simultaneously selecting L (4) common (scanning) electrodes, where L is natural number and $L \geq 2$ (display could not be made with one scanning electrode) (See Drawing 1, item 30, 32, in Detailed Description See paragraphs 0010 and Drawing 3A, item 1-4, in Detailed Description See paragraphs 0029);

a segment electrode drive device (signal-line driver) that supplies a data signal to each of the plurality of segment (signal) electrodes (See Drawing 1, item 20, in Detailed Description See paragraph 0008);

a storage medium from which N-bit display data are simultaneously read out for each of the plurality of segment (signal) electrodes (See Drawing 2, item 100, in Detailed Description See paragraphs 0012-0013);

a decoder circuit having a plurality of sub-decoders and that divides the N(8)-bit display data simultaneously read out from the storage medium into (N/L=8/4=2)-bit data units, decodes the (N/L=8/4=2)-bit data units, and outputs a voltage to be applied to each of segment (signal) electrodes (See Drawings 4-5, item 134, in Detailed Description See paragraphs 0034, 0036);

wherein

in a first mode, the N=8-bit display data provides $2^2=4$ display gradients for each of L=4 pixels on each of the segment (signal) electrodes, and an output voltage is output from selected one of sub-decoders in each of A divided periods of one horizontal scanning period (See Drawings 6,7B, items G/D, CA, CL, in Detailed Description See paragraphs 0036-0038);

in a second mode, the N=8-bit display data provides $2=2$ display gradients for each of L=4 pixels on each of the segment (signal) electrodes, and an output voltage is output from a selected one of the subdecoders every n=2 horizontal scanning periods (See Drawings 6,7A, items G/D, CA, CL, in Detailed Description See paragraphs 0036-0038).

Shingo does not show for the first mode formula $A=N/L \geq 2$, and for second mode does not show formula $1 \leq B = A/n$ and $n \geq 2$.

It would have been obvious to one of ordinary skill in the art that parameters of Shingo apparatus ($N=8$, $L=4$, $n=2$) will satisfy both formulas $A = 2$ and $B = A/n = 1$ and description of both modes operation.

As to claim 8, Shingo teaches a method for driving a display comprising a plurality of pixels, each of which is located at a respective one of a plurality of intersections formed between one of a plurality of common electrodes (240 scanning lines) and one of a plurality of segment electrodes (320 signal lines), wherein an orientation state of an electro-optical material of each pixel is controlled by a voltage applied to it (See Drawing 1, item 10, in Detailed Description See paragraph 0008), the display driver apparatus comprising:

a common electrode drive device (scanning line driver 30) that supplies a scanning signal for simultaneously selecting L (4) common (scanning) electrodes, where L is natural number and $L \geq 2$ (display could not be made with one scanning electrode) (See Drawing 1, item 30, 32, in Detailed Description See paragraphs 0010 and Drawing 3A, item 1-4, in Detailed Description See paragraphs 0029);

supplying a data signal to each of the plurality of segment (signal) electrodes (See Drawing 1, item 20, in Detailed Description See paragraph 0008); simultaneously reading N -bit display data for plurality of segment electrodes (See Drawing 2, item 100, in Detailed Description See paragraph 0012);

dividing each read N(8)-bit display data into (N/L=8/4=2)-bit data units, decodes the (N/L=8/4=2)-bit data units, decoding (N/L=8/4=2)-bit data units, and output a voltage to be applied to each of segment (signal) electrodes (See Drawings 4-5, item 134, in Detailed Description See paragraphs 0034, 0036);

wherein

in a first mode, the N=8-bit display data provides $2^2=4$ display gradients for each of L=4 pixels on each of the segment (signal) electrodes, and an output voltage is output from selected one of sub-decoders in each of A divided periods of one horizontal scanning period (See Drawings 6,7B, items G/D, CA, CL, in Detailed Description See paragraphs 0036-0038);

in a second mode, the N=8-bit display data provides $2=2$ display gradients for each of L=4 pixels on each of the segment (signal) electrodes, and an output voltage is output from a selected one of the subdecoders every n=2 horizontal scanning periods (See Drawings 6,7A, items G/D, CA, CL, in Detailed Description See paragraphs 0036-0038).

Shingo does not show for the first mode formula $A=N/L \geq 2$, and for second mode does not show formula $1 \leq B = A/n \leq 2$.

It would have been obvious to one of ordinary skill in the art that parameters of Shingo method (N=8, L=4, n=2) will satisfy both formulas $A = 2$ and $B = A/n = 1$ and description of both modes operation.

As to claim 2, Shingo teaches a terminal that selects one of the first mode and second mode (See Drawing 6, item G/D, in Detailed Description See paragraph 0036).

As to claims 3, 9, Shingo teaches an interface circuit for inputting the N-bit display data from an external source, wherein a mode selection signal for selecting one of the first mode and the second mode is input through the interface circuit (See Drawing 2, items D0-D7, G/D).

As to claims 4, 10, Shingo teaches a first mode the N-bit display data provides four display gradients for each of L pixels on each of the segment (signal) electrode (See Drawing 7B, in Detailed Description See paragraphs 0036-0038).

As to claims 5, 11, Shingo teaches a second mode the N-bit display data provides two display gradients for each of 2L pixels on each of the segment (signal) electrode (See Drawing 7B, in Detailed Description See paragraphs 0036-0038).

As to claims 6, 7, Shingo teaches an electronic device and electro-optical device comprising a display driver apparatus (See Drawing 1, items 20, 30, in Detailed Description See paragraphs 0001-0002).

Response to Arguments

2. Applicant's arguments filed on 07.01.04 have been fully considered but they are not persuasive.

On page 8, 3rd paragraph of Remarks, Applicant's stated that nowhere does Shingo disclose nor teach the interrelated specific first and second modes of operation. However, Shingo teaches 4 gradation display operation mode, which is completely corresponded to the first mode of the disclosure with four-line simultaneous selection and binary display operation which completely corresponded to second mode of

disclosure, using 2 horizontal scanning periods (See Fig. 7A). The display modes are interrelated by using similar hardware (RAM, two decoders, LCD drivers, ...) and similar timing (See Drawings 1-7 in Shingo and 1-6 in the disclosure).

On the same page, in 3rd and 4th paragraphs of Remarks, Applicant's stated that the relationship between voltage output frequency in a given mode and its corresponding display gradient is not shown by Shingo. However, those limitations that are not in claims. The Specification is not the measure of invention. Therefore, limitations contained therein can not be read into the claims for the purpose of avoiding the prior art. *In re Sporck*, 55 CCPA 743, 386 F.2d 924, 155 USPQ 687 (1968). Furthermore, above mentioned relationship only reflected indirectly in claims by formulas for both modes and Shingo reference completely satisfied both formulas, as shown above in 103 rejection.

Conclusion

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Telephone inquire

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 703-305-5661. The examiner can normally be reached on 8 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 703-305-4938. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ls 10.06.04



VIJAY SHANKAR
PRIMARY EXAMINER